

Appl. No. 10/517,689
Amendment and/or Response
Reply to FINAL Office action of 18 December 2006

**IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

Appl. No. : 10/517,689
Applicant(s) : Nora BRAMBILLA et al.
Filed : 10 December 2004
TC/A.U. : 2821
Examiner : Tung X LE
Atty. Docket : DE-020157

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Title: MINIATURIZED MULTIBAND ANTENNA

PRE-APPEAL BRIEF REQUEST FOR REVIEW

U.S. Patent and Trademark Office
Customer Window, Mail Stop **AF**
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

In response to the final Office action of 18 December 2006, Applicants request review of the final rejection in the above referenced application. No amendments are being filed with this request. This paper is being filed with a Notice of Appeal.

This review is requested for the reasons stated on the attached sheets.

Atty. Docket No. **DE-020157**

The Examiner Has Made Clear Errors in the Rejection of Claims 1-14 and 16-17

Claim 17

Among other things, in the printed circuit board assembly of claim 17, the first and second printed wiring structures of the antenna comprise silver paste.

The Office Action states that Jiang's printed wiring structures "**inherently**" comprise silver paste.

M.P.E.P. § 2112 (IV) provides that:

EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. . . . To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. (citations omitted).

Here, the Examiner has not provided any rationale or evidence tending to show inherency. Indeed, Jiang very specifically discloses that its antenna comprises "**thin copper sheets bonded to respective surfaces of a dielectric material**" (paragraph [0020] at lines 3-6).

Therefore, it is not possible for Jiang to disclose the printed circuit board assembly of claim 17.

Furthermore, in the printed circuit board assembly of claim 17, the antenna is mounted on the printed circuit board such that the end face of the antenna on which are disposed the first and second printed wiring structures is disposed directly on and immediately adjacent to the printed wiring board.

The Office Action states – without any explanation whatsoever – that such a feature is shown in FIGs. 1 and 2. Applicants respectfully submit this is plainly wrong.

Accordingly, for at least these reasons, the rejection of claim 17 is clearly in error and should be withdrawn.

Claims 1-4 and 12-15

Among other things, in the antennas of claims 1-4 and 12-14 each of two resonant printed wiring structures includes: (1) a first printed wire on an end face of a dielectric substrate extending from a first side face of the dielectric substrate to a second side face of the dielectric substrate along one of the edges of the end face; and (2) a second printed wire disposed on the end face in parallel to and spaced apart from the first printed wire, and also extending from the first side face to the second side face.

Jiang's printed wiring structures plainly do not include the first printed wire **extending from a first side face of the dielectric substrate to a second side face of the dielectric substrate along one of the edges of the end face**; and also do not include the second printed wire parallel to and spaced apart from the first printed wire, and **also extending from the first side face to the second side face**.

The Office Action cites element 7a in FIG. 1 of Jiang as supposedly corresponding to the recited first printed wire, and elements "5a and 5c" as supposedly corresponding to the recited second printed wire.

Applicants respectfully disagree. From inspection of FIG. 1 of Jiang, it is plainly evident that element 7a does not **extend from a first side face of the dielectric substrate 9 to a second side face of the dielectric substrate 9**. Furthermore, element 7a is not disposed **along one of the edges of the end face**. So, element 7a cannot correspond to the recited first printed wire. Additionally, elements 5a and 5c are very clearly two physically separated strips and are specifically identified as such by Jiang (see e.g., paragraph [0023], line 3). So "elements 5a and 5c" cannot possibly correspond to the recited "second printed wire" (singular). Finally, neither element 5a nor element 5c nor any "combination" thereof **also extends from the first side face to the second side face**. Therefore they cannot correspond to the recited second printed wire.

Accordingly, for at least these reasons, Applicants respectfully submit that the

rejections of claims 1-4 and 12-14 are clearly in error and should be withdrawn.

Claim 13

Claim 13 is drawn to a printed wiring board on which an antenna as defined in claim 1 – including its dielectric substrate – is mounted.

The Office Action cites FIG. 2 of Jiang as supposedly disclosing the claimed printed wiring board, citing element 11 as supposedly corresponding to the claimed printed wiring board and element 100 as supposedly corresponding to the antenna. However, Applicants respectfully submit that it is plainly evident from FIG. 2 of Jiang that no element 100 is included in the embodiment of FIG. 2, and in particular no element 100 is mounted on element 11! Indeed, it is plainly evident from FIG. 2 that there is no antenna that includes a dielectric substrate mounted on printed circuit board (PCB) 11 of FIG. 2 of Jiang. Indeed, the Office Action completely fails to identify any element in FIG. 2 of Jiang as even supposedly corresponding to the dielectric substrate of an antenna mounted on PCB 11.

Claim 14

Claim 14 is drawn to a radio communication device for the GPS, DCS/PCS, UMTS and Bluetooth domain, including an antenna as claimed in claim 1.

The Office Action does not cite anything at all in Jiang that discloses any radio communication device – and particularly one for the GPS, DCS/PCS, UMTS and Bluetooth domain. The Office Action states that this is an intended use

However, Applicants respectfully submit that the subject matter of claim 14 is itself a radio communication device – so this cannot possibly be an “intended use!”

Claims 5-11

Among other things, in the antennas of claims 5-11 each of two resonant printed wiring structures includes: (1) a first printed wire that stretches out from a first side face of a dielectric substrate to a second side face of the dielectric substrate along one of the edges of the end face; (2) a second printed wire that stretches out from the second printed wire to the first printed wire.

The Office Action cites element 107 in FIG. 1 of Jiang as supposedly corresponding to the recited first printed wiring structure, and element 108 as

supposedly corresponding to the recited second printed wiring structure. The Office Action also cites element 7a as supposedly corresponding to the recited first printed wire, and element 108 as supposedly corresponding to the recited second printed wire.

At the outset, Applicants respectfully submit that element 108 cannot possibly correspond to **both the second printed wiring structure and** the second printed wire of **the first printed wiring structure**, as alleged in the Office Action.

Also, from inspection of FIG. 1 of Jiang, it is plainly apparent that element 7a does not **stretch out from a first side face of the dielectric substrate 9 to a second side face of the dielectric substrate 9**. Furthermore, element 7a is not disposed **along one of the edges of an end face**. So, element 7a cannot correspond to the recited first printed wire. Additionally element 108 does not **stretch out from the second end face to the first end face**. So it cannot correspond to the recited second printed wire.

Accordingly, for at least these reasons, Applicants respectfully submit that the rejections of claims 5-11 are clearly in error and should be withdrawn.

Claim 10

Among other things, in the antenna of claim 10, the fourth printed wire runs along an edge of the first end face. The Office Action cites element 6c of Jiang as supposedly corresponding to the recited fourth printed wire. However, Applicants respectfully submit that it is plainly evident from FIG. 1 of Jiang that element 6c does not **run along an edge of the first end face**.

Accordingly, for at least these reasons, Applicants respectfully submit that the rejection of claim 10 is clearly in error and should be withdrawn.

Claim 16

Among other things, the printed circuit board assembly of claim 16 includes: (1) a printed circuit board; and (2) an antenna mounted on the printed circuit board.

Applicants respectfully submit that Jiang does not disclose any such printed circuit board assembly.

The Office Action cites PCB 11 of FIG. 2 as supposedly corresponding to the

printed circuit board of claim 16, and cites element 9 of FIG. 1 as supposedly corresponding to the dielectric substrate of claim 16.

At the outset, Jiang very clearly discloses that FIG. 1 shows one embodiment of an antenna (including element 9), and FIG. 2 shows a completely separate embodiment of an antenna (including PCB 11). Jiang does not disclose any PCB assembly that includes **both** element 9 and PCB 11. More specifically, Jiang does not disclose any PCB assembly that includes element 9 mounted on element 11 – or any other antenna including a dielectric substrate mounted on a PCB.

So Jiang cannot possibly disclose the printed circuit board assembly of claim 16.

Furthermore, as explained above with respect to claim 1, Applicants respectfully submit that Jiang does not disclose an antenna including the first and second printed wiring structures each including the recited first and second wires.

Accordingly, for at least these reasons, Applicants respectfully submit that the rejection of claims 16 is clearly in error and should be withdrawn.

CONCLUSION

In view of the foregoing explanations, Applicant respectfully requests that the prior art rejections of claims 1-14 and 16-17 be withdrawn and the application returned to the Examiner for further prosecution.

Respectfully submitted,

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